

**Amendments to the Claims:**

This listing of the claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1-12 (Cancelled)

13 (Previously Presented). A vector comprising a DNA sequence according to claim 55.

14 (Original). A vector according to claim 13 capable of being expressed in a eukaryotic host cell.

15 (Original). A vector according to claim 13 capable of being expressed in a prokaryotic host cell.

16 (Previously Presented). Transformed eukaryotic or prokaryotic host cells containing a vector according to claim 13.

17-19 (Cancelled)

20 (Previously Presented). An isolated NIK polypeptide according to claim 53, wherein said polypeptide is the polypeptide encoded by the nucleotide sequence of SEQ ID NO:6, or a fragment thereof that binds to TRAF2 and either inhibits or increases the activity of NF- $\kappa$ B.

21 (Previously Presented). A method for producing a polypeptide that binds to TRAF2 and either inhibits or increases the activity of NF- $\kappa$ B, comprising:

growing transformed host cells in accordance with claim 16 under conditions for the expression of an expression product from said cells;

effecting post-translational modification of said expression product as necessary for obtaining said polypeptide; and

isolating said polypeptide.

22 (Previously Presented). An isolated molecule comprising an antibody, active fragment of the antibody, or derivative thereof, specific for a polypeptide according to claim 69.

23-42 (Cancelled)

43 (Previously Presented). A method for screening of a ligand capable of binding a polypeptide according to claim 69 comprising contacting an affinity chromatography matrix to which said polypeptide is attached with a cell extract whereby the ligand is bound to said matrix, and eluting, isolating and analyzing said ligand.

44 (Previously Presented). A method for screening of a DNA sequence coding for a ligand capable of binding to a polypeptide according to claim 69 comprising applying the yeast two-hybrid procedure in which a sequence encoding said polypeptide is carried by one hybrid vector and sequences from a cDNA or genomic DNA library are carried by the second

hybrid vector, transforming yeast host cells with said vectors, isolating the positively transformed cells, and extracting said second hybrid vector to obtain a sequence encoding said ligand.

45 (Cancelled)

46 (Currently Amended). A method for identifying and producing a ligand capable of ~~either inhibiting or increasing the cellular activity which is changed or mediated by~~ binding to a polypeptide according to claim 53, comprising:

- a) screening for a ligand capable of binding to said polypeptide;
- b) identifying and characterizing a ligand, other than TRAF2 or portions of a receptor of the TNF/NGF receptor family, found by said screening to be capable of said binding; and
- c) producing said ligand in substantially isolated and purified form.

47 (Previously Presented). A method for identifying and producing a molecule capable of binding to NIK, comprising:

- a) screening for a molecule capable of binding to the NIK sequence of SEQ ID NO:7;

b) identifying and characterizing a molecule, other than TRAF2 or portions of a receptor of the TNF/NGF receptor family, found by said screening step to be capable of said binding; and

c) producing said molecule in substantially isolated and purified form.

48 (Cancelled)

49 (Previously Presented). A method for identifying and producing a molecule capable of binding to a polypeptide according to claim 69 comprising:

a) screening for a molecule capable of binding to a polypeptide according to claim 69;

b) identifying and characterizing said molecule; and

c) producing said molecule in substantially isolated and purified form.

50 (Previously Presented). An isolated molecule comprising an antibody, active fragment of the antibody, or derivative thereof, specific for a polypeptide according to claim 53.

51-52 (Cancelled)

53 (Previously Presented). An isolated polypeptide in accordance with claim 69, wherein said polypeptide of (a) is

the polypeptide encoded by the nucleotide sequence of SEQ ID NO:6.

54 (Previously Presented). A DNA molecule comprising an isolated DNA sequence encoding a polypeptide in accordance with claim 69 or consisting of a recombinant vector comprising said DNA sequence.

55 (Previously Presented). A DNA molecule in accordance with claim 54, wherein said DNA sequence is selected from the group consisting of:

(i) a cDNA sequence comprising the nucleotide sequence of SEQ ID NO:1;

(ii) a cDNA sequence comprising the nucleotide sequence of SEQ ID NO:6;

(iii) a cDNA sequence comprising the nucleotide sequence of SEQ ID NO:4;

(iv) a DNA sequence consisting of a fragment of a sequence of (i)-(iii) which encodes a polypeptide that binds to TRAF2 and either inhibits or increases the activity of NF- $\kappa$ B;

(v) a DNA sequence capable of hybridization to a sequence of (i)-(iv) under moderately stringent conditions and which encodes a polypeptide that binds to TRAF2 and either inhibits or increases the activity of NF- $\kappa$ B; and

(vi) any DNA sequence other than those defined in (i)-(v) which encodes a polypeptide in accordance with claim 54.

56 (Previously Presented). A DNA molecule in accordance with claim 55, wherein said DNA sequence comprises the nucleotide sequence of SEQ ID NO:1 or SEQ ID NO:4.

57 (Previously Presented). A DNA molecule in accordance with claim 55, wherein said DNA sequence comprises the nucleotide sequence of SEQ ID NO:3.

58 (Previously Presented). A DNA molecule in accordance with claim 55, wherein said DNA sequence comprises a DNA sequence encoding the polypeptide encoded by the DNA sequence of SEQ ID NO:6 (protein NIK of SEQ ID NO:7)).

59 (Previously Presented). A DNA molecule in accordance with claim 54, wherein said DNA sequence encodes

(1) a polypeptide wherein said polypeptide of (a) is the polypeptide encoded by the nucleotide sequence of SEQ ID NO:1, or

(2) a polypeptide that is encoded by a DNA sequence capable of binding to a DNA sequence encoding the sequence of (1) under moderately stringent conditions, which polypeptide binds to TRAF2 and either inhibits or increases the activity of NF- $\kappa$ B.

60 (Previously Presented). An anti-sense oligonucleotide consisting of a sequence complementary to at least a portion of the mRNA encoding a TRAF2-binding polypeptide comprising the amino acid sequence of SEQ ID NO:2, an amino acid sequence encoded by the nucleotide sequence of SEQ ID NO:3, or the amino acid sequence of SEQ ID NO:5, said anti-sense oligonucleotide being capable of effectively blocking the translation of said mRNA.

61 (Cancelled)

62 (Previously Presented). An isolated polypeptide comprising the amino acid sequence set forth as SEQ ID NO:7 or an analog thereof which differs from the sequence of SEQ ID NO:7 by a substitution, deletion or insertion of a single amino acid, which analog binds to TRAF2 and either inhibits or increases the activity of NF- $\kappa$ B.

63 (Previously Presented). A DNA molecule comprising an isolated DNA sequence encoding a polypeptide in accordance with claim 62 or consisting of a recombinant vector comprising said DNA sequence.

64 (Previously Presented). A method for identifying and producing a molecule capable of binding to a polypeptide according to claim 62, comprising:

a) screening for a molecule capable of binding to said polypeptide;

b) identifying and characterizing a molecule, other than TRAF2 or portions of a receptor of the TNF/NGF receptor family, found by said screening to be capable of said binding; and

c) producing said molecule in substantially isolated and purified form.

65 (Previously Presented). A DNA molecule comprising an isolated DNA sequence encoding a polypeptide in accordance with claim 53 or consisting of a recombinant vector comprising said DNA sequence.

66 (Previously Presented). A vector comprising a DNA sequence according to claim 65.

67 (Previously Presented). Transformed eukaryotic or prokaryotic host cells containing a vector according to claim 65.

68 (Previously Presented). A method for producing a polypeptide that binds to TRAF2 and either inhibits or increases the activity of NF- $\kappa$ B, comprising:

growing transformed host cells in accordance with claim 67 under conditions for the expression of an expression product from said cells;

effecting post-translational modification of said expression product as necessary for obtaining said polypeptide; and



isolating said polypeptide.

69 (Currently Amended). An isolated polypeptide that binds to TRAF2 and either inhibits or increases the activity of NF- $\kappa$ B, said polypeptide:

a) comprising the amino acid sequence of SEQ ID NO:2, an amino acid sequence encoded by the nucleotide sequence of SEQ ID NO:6, or the amino acid sequence of SEQ ID NO:5;

b) comprising an amino acid sequence of an analog of a), having no more than ten changes in the amino acid sequence of a), each said change being a substitution, deletion or insertion of an amino acid, which analog binds to TRAF2 and either inhibits or increases the activity of NF- $\kappa$ B;

c) consisting of an amino acid sequence of a fragment of ~~a)~~ the amino acid sequence of SEQ ID NO:2, an amino acid sequence encoded by the nucleotide sequence of SEQ ID NO:6, or the amino acid sequence of SEQ ID NO:5, which fragment binds to TRAF2 and either inhibits or increases the activity of NF- $\kappa$ B; or

d) comprising a derivative of a), b) or c) by modification of a functional group which occurs as a side chain or an N- or C-terminal group of one or more amino acid residues thereof without changing one amino acid to another

of the twenty commonly occurring natural amino acids, which derivative binds to TRAF2 and either inhibits or increases the activity of NF- $\kappa$ B.

70 (Previously Presented). An isolated polypeptide in accordance with claim 62, wherein said analog is one which differs from the sequence of SEQ ID NO:7 by a single conservative substitution, said conservative substitution being one of the following:

<u>Original Residue</u>	<u>Conservative Substitution</u>
Ala	Gly; Ser
Arg	Lys
Asn	Gln; His
Asp	Glu
Cys	Ser
Gln	Asn
Glu	Asp
Gly	Ala; Pro
His	Asn; Gln
Ile	Leu; Val
Leu	Ile; Val
Lys	Arg; Gln; Glu
Met	Leu; Tyr; Ile
Phe	Met; Leu; Tyr
Ser	Thr
Thr	Ser
Trp	Tyr
Tyr	Trp; Phe
Val	Ile; Leu;

or said conservative substitution being an exchange within one of the following five groups:

1. Small aliphatic, nonpolar or slightly polar residues: Ala, Ser, Thr, Pro, Gly;
2. Polar negatively charged residues and their amides: Asp, Asn, Glu, Gln;
3. Polar, positively charged residues: His, Arg, Lys;
4. Large aliphatic nonpolar residues: Met, Leu, Ile, Val, Cys; and
5. Large aromatic residues: Phe, Tyr, Trp.

71 (Previously Presented). An isolated polypeptide in accordance with claim 70, wherein said single conservative substitution is between an alanine and a proline residue.

72 (Cancelled)

73 (Previously Presented). An isolated polypeptide in accordance with claim 69, wherein said analog of b) is one having no more than five of said changes in the amino acid sequence of a).

74 (Previously Presented). An isolated polypeptide in accordance with claim 69, wherein said analog of b) is one having no more than three of said changes in the amino acid sequence of a).

75 (Previously Presented). An isolated polypeptide in accordance with claim 69, wherein said analog of b) is one having no more than one of said changes in the amino acid sequence of a).

76 (Cancelled)

77 (Previously Presented). A DNA molecule comprising an isolated DNA sequence encoding a polypeptide in accordance with claim 73 or consisting of a recombinant vector comprising said DNA sequence.

78 (Previously Presented). A DNA molecule comprising an isolated DNA sequence encoding a polypeptide in accordance with claim 74 or consisting of a recombinant vector comprising said DNA sequence.

79 (Previously Presented). A DNA molecule comprising an isolated DNA sequence encoding a polypeptide in accordance with claim 75 or consisting of a recombinant vector comprising said DNA sequence.